National Institute of Environmental Health Sciences

Impacts of climate change on agriculture

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Abstract:

Climate change has emerged as the most prominent of the global environment issues and there is a need to evaluate its impact on agriculture. Crop simulation models help greatly in this regard. Crop models such as WTGROWS, INFOCROP, ORYZA and DSSAT have been widely used for land use planning, agri-production estimates, impact of climate change and environmental impact analysis. Vulnerable regions under future scenarios of climate change and adaptation strategies (agronomic and input management) have been evolved for many important crops by using simulation techniques. One of the simple empirical techniques for evaluating the impact of future climate change is through historic analysis of the response of crops to inter-seasonal climatic variability. The impact of temperature rise is different for crops grown under variable production environments. Interactions exist for changes in temperature, carbon dioxide concentration, solar radiation and rainfall on growth and yield of crops. Adaptation strategies through the adoption of agronomic management options (such as altered date of sowing, scheduling of water and nutrients) can sustain agricultural productivity under climate change. The rapid changes in land use and land cover have to be included for impact analysis. Linking of the socioeconomic aspects needs to be strengthened.

Source: Ask your librarian to help locate this item.

Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Food/Water Security, Precipitation, Solar Radiation, Temperature

Food/Water Security: Agricultural Productivity

Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

Geographic Location:

resource focuses on specific location

Global or Unspecified

Health Impact: ☑

specification of health effect or disease related to climate change exposure

Health Outcome Unspecified

Intervention: ☑

strategy to prepare for or reduce the impact of climate change on health

A focus of content

Mitigation/Adaptation: ☑

mitigation or adaptation strategy is a focus of resource

Adaptation

Model/Methodology: ☑

type of model used or methodology development is a focus of resource

Exposure Change Prediction

Resource Type: ☑

format or standard characteristic of resource

Review

Timescale: ☑

time period studied

Time Scale Unspecified

Vulnerability/Impact Assessment: ☑

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

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